REMARKS/ARGUMENTS

By this Amendment, claim 10 is amended. Claims 3, 5-14, and 48-61 are pending.

Citations to the Specification are directed to U.S. Patent Application No. 2005/0014254 (Kruse). Support for the amendment to claim 10 can be found throughout the Specification as filed, and specifically in ¶[0014].

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

The Examiner's courtesy in granting an interview to Applicants' representative on August 5, 2008 is gratefully acknowledged. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

Rejection under 35 USC § 112, first paragraph

Claims 3, 5-14, and 48-61 stand rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the enablement requirement. This rejection is respectfully traversed.

The Examiner argues that the total lack of enablement is raised based on the lack of evidence in the specification that the claimed cells express surface antigens that characterize pluripotent cells, and that the claimed cells have a normal karyotype. The Examiner has cited the NIH document which lists its criteria for ES cells (Office Action at page 3). The Examiner argues that while the instant specification teaches that the pancreatic stem cells can differentiate into nerve cells (expressing PGP 9.5. and NF), glial cells (expressing S100 and GFAP), muscle cells (expressing SMA), cartilage (expressing collagen type II), exocrine glandular cells (expressing amylase and trypsin), endocrine glandular cells (expressing insulin) and epidermal

cells (expressing cytokeratin), following organoid body formation, the Specification does not teach that the instant cells express cell surface markers associated with pluripotent cells and that they exhibit a normal karyotype (Office Action at page 4).

The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. United States v. Telectronics, Inc., 857 F.2d 778, 785 (Fed. Cir. 1988). A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 USC 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. Assuming that sufficient reason for such doubt exists, a rejection for failure to teach how to make and/or use will be proper on that basis. In re Marzocchi, 439 F.2d 220, 224 (CCPA 1971).

Here, the claims are enabled because there is not any reason to doubt the objective truth of the statements contained in the Specification for enabling support. The Specification discloses the manner and process for making and using the claimed invention, including working examples which show the efficacy of the claimed invention. For example, the Specification presents examples of pluripotent stem cells isolated from pancreas of human and rat, and that these cells have been shown to differentiate into nerve, glia, cartilage, exocrine and endocrine cells (see Specification at ¶[0061] to ¶[0062]. In addition, Dr. Kruse's previously submitted Rule 1.132 Declarations describe how experimental protocols described in the application were used to prepare isolated pluripotent adult stem (IPAS) cells from fourteen different species of animals.

The Examiner further argues that while the specification provides guidance for pluripotent stem cells from rat and human pancreas, the Examiner alleges that the 132 does not teach that pancreatic tissue from goat differentiates into the same cell types as that of rat and human (Office Action at pages 4-5).

However, a third Declaration of Dr. Kruse under 37 CFR 1.131 presenting experimental data will be submitted, including evidence that pluripotent stem cells can be isolated from pancreatic tissue of a third species, i.e. goat. The Declaration will also present evidence regarding the confirmation of a normal karyotype.

With regard to the issue of whether the presence of nestin is indicative for a neuronal stem cell, Applicant submits herewith the Kajahn reference (Kajahn, J., et al., Skin-derived human adult stem cells surprisingly share many features with human pancreatic stem cells. Eur. J. Cell Biol. (2007)) which teaches that (Kajahn at page 4, column 2)(emphasis added):

> To determine whether the isolated human skin cells exhibit stem cell properties, we tested the cells for the stem cell markers Oct-4 (Nichols et al., 1998; Tai et al., 2005; Wang et al., 2006) and SSEA-1 (Shamblott et al., 1998) as well as for the adult stem cell marker nestin (Schultz et al., 2006; Wiese et al., 2004). By immunocytochemistry, the isolated human skin cells (primary and outgrowing cells from OBs) and primary human pancreatic stem cells both expressed these proteins at a comparable level (Fig. 1).

In addition the Kajahn reference teaches that (Kajahn at page 5, column 1):

> Gene profiling by RT-PCR confirmed the existence of Oct-4 and nestin mRNAs in all three cell populations (Fig. 2).

Thus, the presence of the marker nestin as an indicator of pluripotency has been demonstrated for pancreatic stem cells and skin-derived cells in Figs. 1 and 2 of Kajahn et al.

Here, the Specification presents examples of pluripotent stem cells isolated from pancreas

of human and rat, and that these cells have been shown to differentiate into nerve, glia, cartilage, exocrine and endocrine cells. Evidence has been submitted in the form of 1.132 Declarations showing isolation of stem cells from several mammals. The Specification teaches that the pancreatic stem cells can differentiate into nerve cells, glial cells, muscle cells, cartilage, exocrine glandular cells, endocrine glandular cells and epidermal cells.

Accordingly, reconsideration and withdrawal of the rejection of claims 3, 5-14, and 48-61 under 35 U.S.C. 112, first paragraph is respectfully requested.

Rejection under 35 USC § 102(b)

Claims 10-13 stand rejected under 35 U.S.C. 102(b) as being anticipated by Schneider et al. as evidenced by Kruse et al. This rejection is respectfully traversed.

The Examiner argues that because the specification does not indicate what parameters is meant by "consisting essentially of' of the claimed culture, claims 10-13 has been interpreted as "comprising" and the rejection of claims 10-13 remains (Office Action at page 8). Without acquiescing to the propriety of the Examiner's rejection, and solely in an effort to advance prosecution, claim 10 has been amended herein to recite that the stem cell culture consists of the composition according to Claim 3.

Accordingly, reconsideration and withdrawal of the rejection of claims 10-13 under 35 U.S.C. 102(b) is respectfully requested.

Rejection under 35 USC § 102(b)

Claims 10-13 stand rejected under 35 U.S.C. 102(b) as being anticipated by Apte et al, as evidenced by Kruse et al. This rejection is respectfully traversed.

The Examiner argues that because the specification does not indicate what parameters is

meant by "consisting essentially of' of the claimed culture, claims 10-13 has been interpreted as "comprising" and the rejection of claims 10-13 remains (Office Action at page 8). Without acquiescing to the propriety of the Examiner's rejection, and solely in an effort to advance prosecution, claim 10 has been amended herein to recite that the stem cell culture consists of the composition according to Claim 3.

Accordingly, reconsideration and withdrawal of the rejection of claims 10-13 under 35 U.S.C. 102(b) is respectfully requested.

Rejection under 35 USC § 102(e)

Claims 3, 5-13, 59, 60 stand rejected under 35 U.S.C. 102(e) as being anticipated by Roberts et al., US Patent 6,436,704, patented August 20,2002. This rejection is respectfully traversed.

The Examiner argues that Roberts et al. teach that human fetal pancreas was mechanically pulled apart and enzyme treated. The cell aggregates were then washed and spun by centrifugation and were plated in fibronectin-coated wells at 37 degrees Celsius in a humidified 5% carbon dioxide incubator for 72 hours. After 72 hours, the epithelial cells formed suspended spherical structures and the mesenchymal or stromal cells were attached to the surface of the well. When a monolayer of the epithelial cells is desired, the pancreatic aggregates or pancreatic spheres were plated on a collagen-coated dish (Roberts, Example 1) (Office Action at pages 8-9).

The Examiner argues that it is interpreted that the cells taught in the instant specification consists of only pluripotent stem cells because differentiated acinar cells die in the culture condition of 37°C, humidity, and 5%C02. The Examiner further argues that Roberts et al. teach

the same method steps described in the specification of the instant Application, and that as such, the population of cells plated in the fibronectin-coated wells is the same as that claimed. The Examiner further argues that while Roberts et al. describe a way of separating pancreatic progenitor cells from stromal cells by using fibronectin coating on the wells, the cells in the fibronectin-coated wells are the same as those of the instant specification as the cells of Roberts et al. were obtained the same way as that of the instant specification (Office Action at pages 8-9).

In Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (MPEP 2131), the CAFC set forth that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference". In the instant case, not every element of the claims is present in the '704 Roberts patent. The claims are directed to a composition consisting of isolated pluripotent adult stem cells obtained from an exocrine glandular tissue of a salivary gland, a lacrimal gland, a sudoriferous gland, a sebaceous gland and/or gastrointestinal tissue, wherein the exocrine glandular tissue originates from a mammal.

Here, the '704 Roberts patent does not disclose true pluripotent cells (capable to differentiate in cells of all three germ layers) but merely pancreatic progenitor cells which are said to be capable to differentiate into exocrine and endocrine pancreatic cells (see, e.g. abstract, claim 1, column 2, lines 28-44). The term "pluripotent" is not used in the sense of the present invention. For example, the Roberts '704 patent discloses (column 2, lines 47-52):

> This invention is related to the field of developmental and cell biology. In one aspect, the invention relates to a population of substantially pure human pancreatic epithelial progenitor cells which have a pluripotent capability to differentiate into functional exocrine or endocrine pancreatic cells.

In addition, the cells of the '704 Roberts patent are derived from human fetal tissue whereas the present are not directed to cells derived from fetal tissue, for example see ¶[0012]:

> The exocrine glandular tissue used according to this invention may be derived from an adult organism, a juvenile organism or nonhuman fetal organism, preferably a postnatal organism. The term "adult" as used in the present patent application thus refers to the stage of development of the source tissue and not that of the donor organism from which the tissue originates. "Adult" stem cells are nonembryonal stem cells.

Furthermore, contrary to the Examiner's contention, the method as disclosed in the Roberts '704 patent differs considerably form the methods as disclosed in the instant application, because the '704 Roberts patent provide a large number of different growth factors and differentiation factors in the culture medium used in their method whereas the medium of our stem cells does not comprise such factors.

In addition, it is clear from the Roberts '704 patent that the resulting cells are different, because according to claim 5 of the '704 Roberts patent, the progenitor cells have a distinct shape and size of around 10 μm. In contrast to this, the size of the claimed stem cells may vary from 10 to 100 μm and the instantly claimed cells neither have the highly compacted columnar form as described therein nor the rounded or elongated forms described on column 12, lines 9-11, of the specification.

Thus, it should be evident that the present true pluripotent cells are clearly different from the cells described and claimed in the '704 Roberts patent.

Accordingly, reconsideration and withdrawal of the rejection of claims 3, 5-13, 59, 60 under 35 U.S.C. 102(e) is respectfully requested.

* * *

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN, COHEN & POKOTILOW, LTD.

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Please charge or credit our Account No. 03-0075 as necessary to effect entry and/or ensure consideration of this submission.